



**USER MANUAL  
TECHNICAL AND OPERATING DOCUMENTATION  
WORKSHOP WASHERS**

**TYPE: MST 1200**



**Manufacturer:  
P.W Marwis**

Ul. Przylep – Zakładowa 17  
66-015 Zielona Góra  
Tel: 669-100-666 E-mail:marwis@marwis.pl

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## **1.0. Introduction**

The purpose of this documentation is to acquaint the user with the construction, operation and maintenance of the MST 1200 WORKSHOP WASHER. This documentation should be read by all persons authorized to operate these devices, including maintenance personnel and management supervision.

### **2.0. Important information**

Receipt of the device by the user takes place using the procedure specified in the delivery and acceptance protocol or other form agreed with the manufacturer, confirming the receipt of the product.

Upon receipt of the device, the user should:

- check the compliance of the product with the order and assess its technical condition.
- check the completeness of the supplied technical equipment of the device. In the event of any discrepancies or non-conformities, immediately report them to the manufacturer and record them in the acceptance protocol,
- check the completeness of signatures and stamps in the technical and operational documentation and the product warranty card,
- check the completeness of the received documentation,
- test the device in movement. The scope of delivery includes:
  - a complete workshop washer,
  - flow brush,
  - operation and maintenance documentation with the user's manual,
  - device warranty card.

**ATTENTION!** The degreasing and cleaning fluid is delivered on a separate customer order and is not included in the basic delivery of the device.

## **3.0. Purpose of the device**

MST 1200 workshop washers are designed for degreasing and washing all kinds of metal products and elements, with overall dimensions and permissible weight specified in the catalog of our products, using the "Clean Professional" technological fluid.

Attention. Exceeding the permissible mass of washed elements may lead to deformation of the worktop and destruction of the washer's structure.

Intended use: in industrial production of metal products, in repair and renovation workshops, and wherever the technological process requires degreasing and surface washing of products. The use of the device for other purposes as well as any unauthorized modifications is prohibited under pain of losing the warranty.

## **4.0 Transport and storage**

Workshop washers are intended for use only in workshop halls equipped with ventilation systems. It is not allowed to store the devices in the open air. Attention. In a situation requiring short-term storage (no longer than 7 days), the device should be placed under a roof and a cover protecting it against the effects of adverse atmospheric conditions. The optimal storage temperature range is 5-25 ° C. If it is necessary to move the washer, it is recommended to transport the device in a horizontal position using a forklift.

For external transport, the device should be placed on the vehicle floor in a horizontal position, secured with stop blocks and belts fastened to the side of the vehicle. Attention ! When performing loading and transporting activities, take into account the weight of the device and exercise due care. When carrying out these activities, always follow all required safety measures and health and safety regulations.

**ATTENTION. THE EQUIPMENT PREPARED FOR TRANSPORT SHOULD HAVE ALL THE DOORS AND COVERS IN THE CLOSED POSITION. THE MANUFACTURER SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY THE USER OF IMPROPER TRANSPORT AND STORAGE OF THE DEVICE.**

## 5.0. Construction and operation

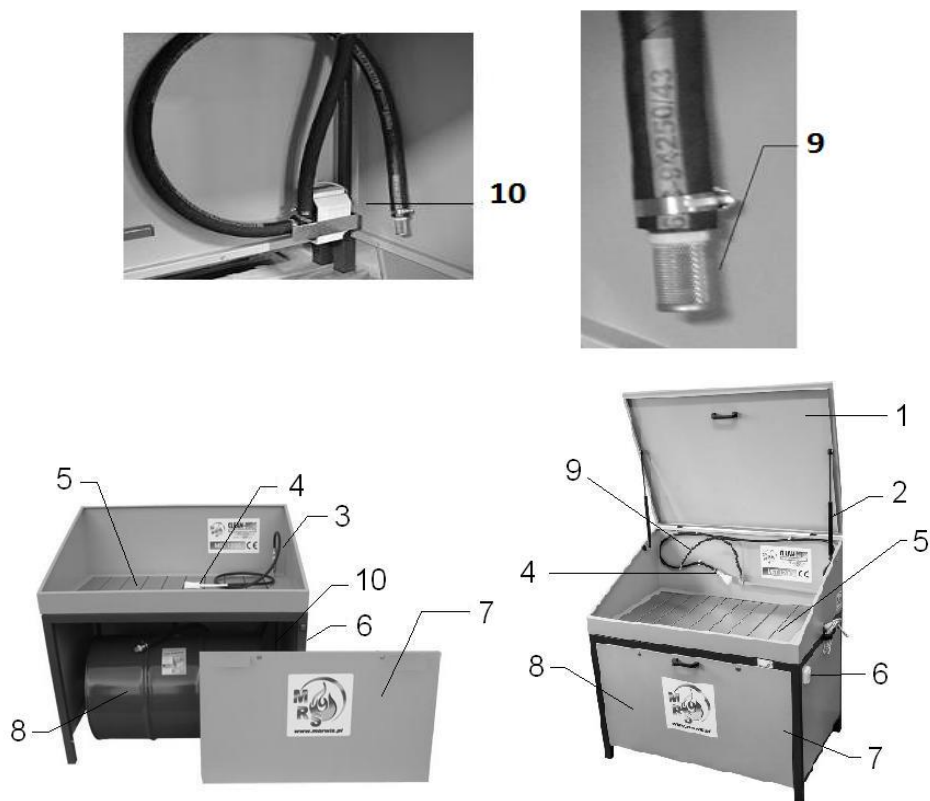
### 5.1. Building

MST 1200 workshop washers have a rigid, welded load-bearing structure made of steel sections and sheets. The entire structure is covered with an aesthetic varnish coat. MST 1200 washers are stationary devices. The design of the washers includes the following design and functional units:

- supporting structure frame,
- worktop (sieve),
- drip tub,
- bathtub cover assembly with pneumatic actuators (additional version)
- container chamber,
- a container with a washing liquid (barrel),
- suction-pressure pump,
- work equipment (flexible hoses, flow brush),
- liquid supply and drainage system, with a control valve,
- kit (additional option)
- electrical power supply installation for the pump with a switch

Stationary workshop washers belong to the group of devices characterized by a simple and uncomplicated structure. Their shape and construction resemble a workbench. The main working element is a drip tray with a worktop, which is a perforated steel screen. The bottom of the bathtub is specially shaped in such a way that the solid deposits fall into the hollows made, and the washing liquid with oily impurities can freely drain into the barrel placed under the worktop. On the right side of the worktop there is a control valve with a connected flexible hose, ending with a flow brush. Additionally, above the worktop, there is a metal hinged cover equipped with pneumatic actuators. Directly under the worktop (in a closed chamber) there is a barrel containing the "Clean Professional" washing and degreasing liquid.

It is an ecological, reusable fluid with special chemical properties. In the lower part of the chamber, on the rear wall, there is a suction and pressure pump. It is an integral part of the washing liquid circulation system. The chamber is closed with a steel door. The washer has its own 230V / 50Hz electrical installation, designed to power the circulation pump, with the outlet of the power cord with a plug, located on the side of the washer. The pump switch is located on the right side of the device body. Protection against electric shock is provided by resetting. Mounted side handles are used to manually move the washers for short distances (inside the workshop room). The MST 1200 version can be additionally equipped with wheels. The construction of the washers is shown in detail in the photos below.



## LEGEND

- 1- hinged cover 6- off pump power supply
- 2-pneumatic cylinder 7- barrel chamber door
- 3-control valve 8- barrel for washing liquid
- 4-rubber hose with a washing brush 9- mesh filter
- 5-worktop 10- pump (inside)

## 5.2. Action

The operation of the MST 1200 washers is based on the removal of greasy impurities from the products using a flow brush through which the washing liquid flows. It is a fluid with the trade name "Clean Professional". It has special cleaning and degreasing properties, in accordance with the fluid safety data sheet. The item to be washed is placed on a perforated worktop, under which a drip tray is located. The liquid flowing through the brush, dissolves and washes away greasy dirt on the product to be washed. Heavy solid impurities fall by gravity onto a special shaped bottom of the bathtub. Lighter oil-derivative compounds flow together with the washing liquid to the barrel located under the worktop. At the bottom of the barrel, heavier compounds are deposited, and the washing fluid (being lighter) returns to circulation. The flow of fluid through the brush is forced by a suction-force pump. The amount of liquid flow through the brush is manually adjusted on the flow valve. Solid impurities lying on the bottom of the bathtub are periodically removed by the service personnel. The used washing liquid and contaminants are collected by the manufacturer "P.W Marwis" under an appropriate agreement, which has the appropriate transport and disposal permit.

## 6.0. Technical characteristics

MST 1200 washers are characterized by a simple structure and uncomplicated operation. All power supplies are housed inside the fluid container compartment to protect them from accidental damage. Access to them is obtained by opening a metal door. This is a beneficial solution that allows easy access for maintenance activities. All washers are fully marked with warning and information, located in places essential for the safety of operation. A bathtub with a worktop can be additionally equipped with a hinged cover, protecting the device during standstill against unauthorized access and emission of technological vapors. The special properties of the "Clean Professional" degreasing liquid allow for its long-term use without frequent replacement. When designing these devices, ergonomic recommendations were taken into account, thus reducing the nuisance of their operation. Technical data and dimensions of devices are presented in the table below.

Description - name	Jm.	Device type
		Mst1200
Technical data:		
-Load capacity	kg	500
- Barrel capacity for washing liquid	liter	200 and 60
-Work area	mm	1175x775
-Working height	mm	800
-Overall height	mm	1200
-Width	mm	1200
-Depth	mm	780
-Weight	kg	80
-Power	V / kW	230/50
-Power installed	kW	0.1
-Protection against electric shock	IP54	reset
-Pump power	kW	0.1
-Max. Pressure working fluid	bar	2

## 7.0. User manual

The task of this manual is to familiarize the user with the correct and safe operation of the MST 1200 stationary washers throughout their lifetime. Both during the manufacturer's warranty period and in the post-warranty period. We remind you that compliance with the basic obligations of the user, required and controlled during the warranty period by the manufacturer's service, the assessments and guidelines contained in this manual are the basic obligations of the user, required and subject to control during the warranty period by the manufacturer's service services.

### 7.1. Safety of operation

Before using the device, it is absolutely necessary to read its operation and maintenance documentation, the operating manual, and the applicable safety conditions at the workplace.

Safe working conditions:

- Only adults, who are familiar with their operating instructions and the health and safety regulations applicable at this position, may be allowed to operate the washers.

Operation by minors is allowed only under supervision,

- the workplace should be equipped with efficient exhaust ventilation,
- during operation, it is obligatory to use full protective equipment recommended by the company health and safety services (protective clothing and footwear, apron, protective glasses, etc.),
- read the safety data sheet of the washing fluid and its effect on operation,
- when operating the washer, it is absolutely necessary to comply with the graphic signs and warnings placed on the body of the device (stickers - pictograms),
- when performing any setting and connection work, use all required safety measures,
- always check the technical condition and cleanliness of the device before starting its operation. In the event of a malfunction, take the device out of service and mark it with an appropriate sign, e.g. "turn it on incorrectly",
- the technical condition of the electrical power supply of the device should be monitored on an ongoing basis and its damage should not be allowed. A damaged installation poses a risk of electric shock,
- the workstation should have efficient lighting and be equipped with fire protection equipment required,
- all identified threats should be immediately reported to the management supervision and OHS services,
- it is forbidden to allow bystanders in the immediate vicinity of the device,
- the device should have designated work safety zones,
- the washing liquid contains volatile and flammable compounds. It is forbidden to use the washing liquid in rooms without efficient ventilation (see fluid characteristics),
- when performing the setup activities (before the device is installed), the required distances should be determined and kept to ensure full safety of operation,
- it is forbidden to leave the workplace without first switching off the electric power supply and removing any contaminants on the worktop,
- when operating the washer, it is strictly forbidden to position the brush outlet towards the face and body of any people in the vicinity,
- it is strictly forbidden to perform any adjustment, renovation or maintenance works without first switching off the washer and its power supply.
- it is forbidden to use a washer with an inefficient zeroing system,
- it is forbidden to make any unauthorized modifications to the structure of the device,
- it is forbidden to carry out any repairs and inspections by persons who do not have the required professional qualifications and are not familiar with the operating manual,
- after finishing work, remove all working residues from the inside of the washer and clean the device,
- during the entire operational period, due care should be taken to timely and proper performance of all recommended technical inspections,

- create a "Operation book of the device", where you should note all faults and disruptions in the washer's operation, leaving important information for other employees, affecting the safety of operation.

## 7.2. Warning signage - pictograms

All washers have full information and warning signs (stickers, inscriptions). The purpose of this marking is to graphically highlight the most important recommendations and warnings in the most important places for the safe and proper operation of the device. This marking should be treated as an absolute mandatory sign. In the event of loss of legibility, they should be renewed, restoring them to their original state.

## 7.3. Preparation for commissioning

Preparing the washer for commissioning does not require too many steps on the part of the user. Preparation of the place of installation, determination of the safety zone and connection to the internal power supply system is the responsibility of the user, who should follow the guidelines specified by the manufacturer, contained in this documentation.

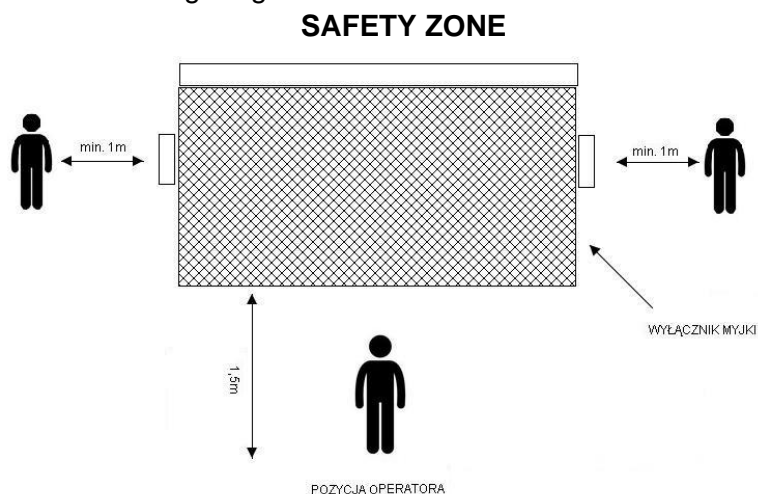
As part of the above-mentioned activities:

- designate the place of installation and safe work zones for the washer in use. It is recommended to use the situational picture below,
- place the washer on a level floor,
- remove the protective layer of the temporary machine (maintenance), if it exists,
- carry out resistance measurements of the entire electrical installation of the washer. The protective installation should meet the requirements of the following standards: PN-EN 60204-1: 2010, PN-EN 292-2: 2000,
- test the commissioning and operation of all working teams.

As part of the test, you should:

- place a tank or a container with a washing liquid in the chamber,
- arm the entire washing fluid circulation system,
- connect the pump's power supply cable to the factory installation socket,
- check the operation of: the pump and the control valve,
- start the washer and subject it to a test run within 0.5h.
- check for fluid leaks at the hydraulic system connections. Fluid leaks and leaks are inadmissible,
- check the correct operation of electric circuit breakers: main and washer,
- check the correct operation of the bathtub cover air shock absorbers (additional option),
- running tests should be recorded in the "Device Operation Book",

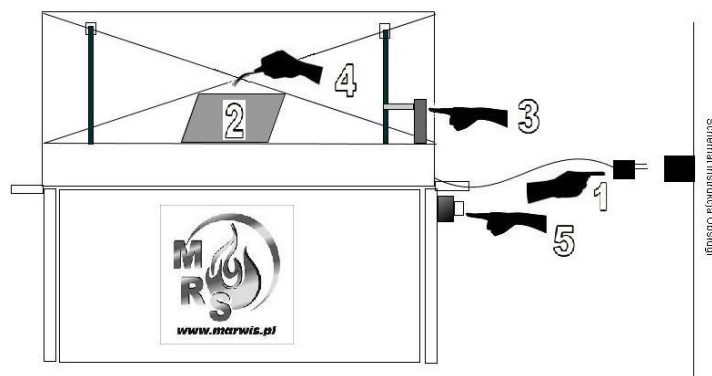
Attention ! Only trained employees of the manufacturer's or user's technical service, having appropriate professional qualifications, are authorized to perform any connection works and operation tests. Staying bystanders within the machine's working range - FORBIDDEN !!!!!



## 7.4. Commissioning and operation

After successful operation tests and making an entry in the "Operational Book", the device can be put into operation by trained and familiarized with the operating manual employees. The method of commissioning and operation is presented on the above-mentioned reference drawings and photos. In order to start the washer:

- insert the power plug of the washer (1) into a 230V / 50Hz socket,
- place the product (2) on the worktop,
- switch the valve (3) to the "open" position,
- grab the brush (4) in your hand and direct its outlet to the object to be washed,
- turn on the pump power on the switch (5) of the washer,
- set the valve in the selected position that guarantees the effectiveness of washing off contaminants. If the liquid flows through the brush at the flow rate set on the valve, it can be assumed that the washer is working properly and it is possible to continue working. The flow rate can be regulated by the appropriate setting of the flow valve.



After finishing work, you should:

- close the flow valve,
- turn off the pump on the device switch,
- turn off the power supply on the main switch,
- remove the product and clean the worktop,
- raise the worktop and remove all remaining impurities from the bathtub,
- close the washer cover (additional option),

**ATTENTION. IN ANY SITUATION WHICH HAS A HAZARDOUS TO OPERATION, STOP THE PUMP AND THE ELECTRICAL SUPPLY IMMEDIATELY.**

## 7.5. Operating notes

MST 1200 washers are devices that are easy to use and do not pose any operating problems. It is sufficient to comply with the general requirements contained in this documentation and to exercise due care in the performance of the required technical inspections. However, we would like to draw your attention to the necessity to apply the basic rules applicable to the operation of this type of equipment:

- before starting to use, enter the "Operation book of the device" and keep all entries regarding the maintenance of the device in the required technical condition (breakdowns, faults, technical inspections),
- in the immediate vicinity of the washer, in a visible place, there should be a workplace manual for this device,
- during operation, the technical capabilities of this device should be taken into account, without overloading the worktop and the installed accessories,
- the cables of all installations should be fully functional and protected against damage,
- no leaks of washing fluid on installation connections are allowed,
- all installed filters should be cleaned on an ongoing basis,



- it is strictly forbidden to arbitrarily mix the "CLEAN PROFESSIONAL" liquid with other additives,
- it is forbidden to use the washer when there is no fluid in the circulation system. This can lead to irreversible damage to the pump,
- the degree of contamination of the washing fluid should be checked on an ongoing basis. The outflow of goo and fluid with a dark brown color indicates that the fluid is depleted and the fluid needs to be replaced,
- surface cracks in flexible conduits qualify them for replacement. Attention. The rubber hose on the section connecting the brush with the valve is classified as consumables subject to replacement by the user,
- when using the "CLEAN PROFESSIONAL" washing liquid, it is obligatory to read the Safety Data Sheet of this liquid and follow all recommendations contained therein,
- throughout the lifetime of the device, due care should be taken to carry out all the recommended technical inspections in a proper and timely manner.

#### 7.6. Proceedings in emergency situations and methods of removing some faults

In any emergency, switch off the power supply to the device immediately. The breakdown should be immediately reported to the steering supervision services, and a warning sign should be placed on the machine, eg "out of order - do not turn on". Attention! Each case of an emergency should be recorded in the "Operation book of the device".

If the failure or defect occurred during the warranty period and is caused by a design defect of the device, it should be immediately reported to the manufacturer's service, which will provide you with the necessary information about the procedure for further proceedings and the expected date of repair. The complaint procedure is specified in the warranty conditions. The vast majority of fault events occur as a result of the user's failure to observe the required technical inspections or operation of the device in a manner inconsistent with the recommendations contained in the operating manual. For the most part, these defects can be removed by the user on his own. Below are some examples of common bugs, and simple ways to fix this type of fault:

- the washer is powered on, the pump does not feed the liquid. The reason may be air in the installation. It is necessary to correct all clamps on flexible conduits, open the flow valve and fill the pump (from the top) with washing liquid through the valve.
- despite the deaerating of the installation, the pump still does not deliver fluid. The reason may be a heavily contaminated filter in the tank (barrel). Remove the filter tube and clean it thoroughly. Check the position of the valve lever. The lever should be in the "open" position (along the vertical axis of the valve).
- there is a breakdown of current on the washer housing. The probable cause is flooding the electrical box with washing liquid, or loosening of the wire on the door. Belongs switch off the power supply immediately and report the fault to the technical service. It is forbidden to use defective device. A restart is only possible after the fault has been rectified.
- thick goo and dark brown liquid come out through the flow brush. This may be because the suction line is too deep in the container with the liquid or the washing liquid is used up. This situation may occur during long-term use of the fluid and indicates the need to replace it. A characteristic feature of this fluid is its diversified working density. Heavy oily contamination is deposited in the lower parts of the barrel, and the clean fluid (being the lighter one) is in the upper part. If the suction hose does not rise, replace the fluid.

In any case related to the occurrence of disruptions in the operation of the washer, you can always contact our service staff, where you can always count on professional advice and a comprehensive answer.

#### 8.0. Current service and periodic inspections

During the entire warranty and post-warranty period, the user is obliged to perform all required service and maintenance activities. We remind you that the failure to perform these activities during the warranty period results in the loss of the warranty. The performance of these activities is necessary to maintain the device in proper technical efficiency, guaranteeing the required level of service safety. The user's obligations in this regard include:

- carrying out ongoing cleaning and maintenance activities,
- current removal of minor defects resulting from natural wear of parts and consumables,

## 8.1. Current maintenance and operating activities

Attention! The term "current activities" means their realization according to the identified needs resulting from the daily control and assessment of the technical condition of the device and installed accessories.

Lp.	Part name	Jm.	Quantity	Comments
1	Pump	pcs	1	
2	Pneumatic cylinder	pcs	1(2)	Additional option
3	Filter	pcs	1	
4	Valve	pcs	1	
5	Faucet	pcs	1	Additional option
6	Road wheel	Set	2	Additional option

### Current activities include:

- daily control and assessment of the technical condition of the device and installation,
- ongoing maintenance of the device in the required cleanliness, both during and after operation,
- current filter control,
- ongoing control of the degree of contamination of the washing fluid,
- current removal of minor operational damages.

### LUBRICATION AND MAINTENANCE.

We would like to remind you that lubrication and maintenance should be performed after prior cleaning and removal of impurities from the inside of the bathtub.

- we recommend using the "CLEAN PROFESSIONAL" washing liquid for cleaning the inside of the device,
- for maintenance of external surfaces of cylinder pistons, we recommend using hydraulic oil,
- for cleaning flexible hydraulic conduits, we recommend using agents removing oil contamination, not causing damage to their surface,
- grease can be used to lubricate the hinges,
- for the maintenance of metal elements of the outer plating of the washer, we recommend the use of car body maintenance agents,

## 9.0 Environmental protection - guidelines

The structure of the device and its mechanical equipment are made of steel sheets and sections, protected with a varnish coat. These elements do not emit harmful compounds to the environment. In the event of scrapping the used construction elements, they should be handed over to a company that deals with the purchase and processing of scrap metals by law. Scrapped components are a secondary raw material. Plastic and rubber elements should be disposed of. Attention. The cleaning fluid ("CLEAN PROFESSIONAL") according to its safety data sheet is subject to mandatory disposal. The used fluid should be handed over to the company that has it

required permissions when using the Waste Transfer Card.

THE "CLEAN PROFESSIONAL" WASHING LIQUID IS A SUBSTANCE HARMFUL TO HEALTH AND SHOULD BE USED AND STORED ACCORDING TO THE RECOMMENDATIONS INCLUDED IN THIS PRODUCT SAFETY DATA SHEET The device is a source of noise emissions with an intensity not lower than 75 dB.

## **10.0 List of spare parts**

During the warranty period, the manufacturer of the device is obliged to replace the defective parts according to the needs identified by its service. After the warranty period expires, the parts can be manufactured according to the customer's needs, in accordance with the device documentation. Attention! Fasteners, flexible hoses, flow brush, seals, oils, greases and consumables are commercial materials and are not included among spare parts subject to protection by the manufacturer.

## **11.0. Final remarks**

Unless the contract provides otherwise, the device is handed over and collected using the handover protocol. The same procedure applies to the removal of complaint faults. In this case, it is permissible to use official notes that require mutual confirmation of the technical activities performed.

The terms used in this documentation include the following terms: washer, device. The terms used refer to the same product and they are equivalent.



## **Workshop washer stand manual - model: MST 1200**

### **WASHING PARTS**

#### **! ATTENTION !**

Only one person is required to operate the machine - during the entire work cycle, only that person can and should be in the immediate vicinity of the machine.

1. Insert the power plug of the washer into a 230V / 50Hz socket
2. Open the hinged cover (additional option)
3. Place the product on the worktop
4. Operate the valve to the 'open' position
5. Grab the brush in your hand and direct its outlet towards the object to be washed
6. Turn on pump power at the washer switch
7. Set the valve in the selected position, which guarantees the effectiveness of washing off dirt. If the liquid flows through the brush at the flow rate set on the valve, it can be assumed that the washer is working properly and it is possible to continue working. The flow rate can be regulated by the appropriate setting of the flow valve

After finishing work, you should:

close the flow valve,

turn off the pump on the device switch,  
switch off the power supply at the main switch,  
remove the product and clean the worktop,  
lift the worktop and remove all remaining impurities from the bathtub,  
close the washer cover (additional option),

ATTENTION. IN ANY SITUATION WHICH HAS A HAZARDOUS TO OPERATION, STOP THE PUMP AND THE ELECTRICAL SUPPLY IMMEDIATELY.

### DAILY MACHINE MAINTENANCE

#### ! ATTENTION !

- Before starting work related to the current maintenance of the machine, always:
- control and evaluate the technical condition of the device and installation,
- keep the devices in the required cleanliness, both during and after work,
- control filter contamination,
- check the degree of contamination of the washing liquid,

### INSTRUCTIONS REGARDING HEALTH AND SAFETY

- Before using the machine, read the enclosed operator's manual carefully and make sure you understand it.
- The machine may only be operated by qualified and experienced personnel.
- It is forbidden to remove the protections provided by the manufacturer.
- Never leave the machine running unattended.



Use protective gloves



Use respiratory protection



Use protective glasses



Use protective clothing



Use safety shoes